REMARKS

The Office Action dated September 21, 2006, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1-26 are currently pending in the application, of which claims 1-2, 9-10, and 17-26 are independent claims. Claims 5-6 and 13-14 have been amended to more particularly point out and distinctly claim the invention. No new matter has been added. Entry of the amendments is respectfully requested because entry places the claims in better condition for allowance or appeal, and because entry of the amendments does not raise any new issues that would require further consideration or search. Claims 1-26 are respectfully submitted for consideration.

Claims 5-6 were objected to because "the maximum transmission power threshold" lacks antecedent basis. The Office Action indicated that claims 5-6 should be amended to read "a maximum transmission power threshold." Claims 13-14 were objected to because "decreaser" was misspelled as "descreaser." The Office Action indicated that spelling should be corrected by amendment. Applicants have adopted the Examiner's suggestions. Withdrawal of the objections is respectfully requested.

Claims 1-26 were rejected under 35 U.S.C. 112, first paragraph, as failing to meet the written description requirement. The Office Action stated, more particularly, that the claims contain subject matter that was not described in the specification in such a way as to convey possession of the invention. Specifically, the Office Action found the

limitation "by using minimum bit rates as bit rate allocation portions" (and most particularly "as bit rate allocation portions") not to be described in the specification. The Office Action suggested that this rejection could be overcome by pointing out the support for this limitation in the specification. The Office Action also rejected the same claims on the basis of the same claim language under 35 U.S.C. 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the invention.

Applicants respectfully submit that the feature of "allocating resources in a telecommunication system according the requests in the queue by using the minimum bit rate allocation portions until the maximum transmission power target has been achieved" is fully supported by the present specification as originally filed. For example, the present specification, at page 8, lines 19-23, indicates that the resources are allocated on the basis of the requests until the maximum power target is achieved, however the role of minimum bit rate portions is not explained. Nevertheless, the role of minimum bit rate portions in the allocation is explained, for example, at page 8, line 35, to page 9, line 3.

Furthermore, the minimum bit rate portions are discussed, in general, at page 9, lines 16-25. Likewise, the particular example shown in Figure 3, and described at page 9, line 29, to page 10, line 12, (paragraphs [0056] and [0057] in the published version of the application) illustrates the use of minimum bit rate portion in the allocation of resources in a telecommunication system.

Thus, Applicants respectfully submit that all of claims 1-26 are in compliance with both the written description and definiteness requirements of 35 U.S.C. 112 (first and

second paragraphs, respectively). It is, therefore, respectfully requested that the rejection of claims 1-26 be withdrawn.

Claims 1-26 were rejected under 35 U.S.C. 102(b) as being allegedly anticipated by WO 01/63851 of Raitola et al. ("Raitola"). Applicants respectfully traverse this rejection.

Claim 1, upon which claims 3-4 depend, is directed to a data transmission method. The method includes determining a number of bit rate classes. The method also includes setting minimum bit rates for the bit rate classes. The method further includes setting a general minimum bit rate. The method additionally includes setting a maximum transmission power target. The method also includes arranging resource requests into a queue. The method further includes allocating resources in a telecommunication system according to the requests in the queue by using the minimum bit rates as bit rate allocation portions until the maximum transmission power target is achieved.

Claim 2, upon which claims 5-8 depend, is directed to a data transmission method. The method includes determining a number of bit rate classes. The method also includes setting minimum bit rates for the bit rate classes. The method further includes setting a general minimum bit rate. The method additionally includes setting a maximum transmission power target. The method also includes arranging resource requests into a queue. The method further includes allocating resources in a telecommunication system according to the requests in the queue by using the minimum bit rates as bit rate allocation portions. The method additionall includes, if the maximum transmission

power target is not achieved when resources have been allocated to all users in the queue, increasing bit rates based on the queue until the maximum transmission power target is achieved. The method also includes, if the resource requests cause too much load in relation to the maximum transmission power target, decreasing the required number of bit rates in a predetermined way.

Claim 9 is directed to a radio network controller. The radio network controller includes a bit rate class determination unit configured to determine a number of bit rate classes. The radio network controller also includes a bit rate setter unit configured to set minimum bit rates for the bit rate classes. The radio network controller further includes a general bit rate setter unit configured to set a general minimum bit rate. The radio network controller additionally includes a maximum transmission power target setter unit configured to set a maximum transmission power target. The radio network controller also includes a queue unit configured to arrange resource requests into a queue. The radio network controller further includes a resource allocation unit configured to allocate resources according to the requests in the queue by using the minimum bit rates as bit rate allocation portions until the maximum transmission power target is achieved.

Claim 10, upon which claims 11-16 depend, is directed to a radio network controller. The radio network controller includes a bit rate class determination unit configured to determine a number of bit rate classes. The radio network controller also includes a bit rate setter unit configured to set minimum bit rates for the bit rate classes. The radio network controller further includes a general bit rate setter unit configured to

set a general minimum bit rate. The radio network controller additionally includes a maximum transmission power target setter unit configured to set a maximum transmission power target. The radio network controller also includes a queue unit configured to arrange resource requests into a queue. The radio network controller further includes a resource allocation unit configured to allocate resources according to the requests in the queue by using the minimum bit rates as bit rate allocation portions. The radio network controller further includes a bit rate increaser unit configured to increase bit rates based on the queue until the maximum transmission power target is achieved. The radio network controller additionally includes a bit rate decreaser unit configured to decrease the required number of bit rates in a predetermined way.

Claim 17 is directed to a base station. The base station includes a resource arrangement unit configured to arrange resource requests into a queue. The base station also includes a resource allocation unit configured to allocate resources according to the requests in the queue by using minimum bit rates as bit rate allocation portions.

Claim 18 is directed to a base station. The base station includes a resource arrangement unit configured to arrange resource requests into a queue. The base station also includes a resource allocation unit configured to allocate resources according to the requests in the queue by using minimum bit rates as bit rate allocation portions. The base station further includes a bit rate increaser unit configured to increase bit rates based on the queue until a maximum target set for a transmission power is achieved. The base station

additionally includes a bit rate decreaser unit configured to decrease a required number of bit rates in a predetermined way.

Claim 19 is directed to a radio network controller. The radio network controller is configured to determine a number of bit rate classes. The radio network controller is also configured to set minimum bit rates for the bit rate classes. The radio network controller is further configured to set a general minimum bit rate. The radio network controller is additionally configured to set a maximum transmission power target. The radio network controller is also configured to arrange resource requests into a queue. The radio network controller is further configured to allocate resources according to the requests in the queue by using the minimum bit rates as bit rate allocation portions until the maximum transmission power target is achieved.

Claim 20 is directed to a radio network controller configured to determine a number of bit rate classes. The radio network controller is also configured to set minimum bit rates for the bit rate classes. The radio network controller is further configured to set a general minimum bit rate. The radio network controller is additionally configured to set a maximum transmission power target. The radio network controller is also configured to arrange resource requests into a queue. The radio network controller is further configured to allocate resources according to the requests in the queue by using the minimum bit rates as bit rate allocation portions. The radio network controller is additionally configured to increase bit rates based on the queue until the

maximum transmission power target is achieved. The radio network controller is also configured to decrease the required number of bit rates in a predetermined way.

Claim 21 is directed to a base station. The base station is configured to arrange resource requests into a queue. The base station is also configured to allocate resources according to the requests in the queue by using minimum bit rates as bit rate allocation portions.

Claim 22 is directed to a base station. The base station is configured to arrange resource requests into a queue. The base station is also configured to allocate resources according to the requests in the queue by using minimum bit rates as bit rate allocation portions. The base station is further configured to increase bit rates based on the queue until a maximum target set for a transmission power is achieved. The base station is additionally configured to decrease a required number of bit rates in a predetermined way.

Claim 23 is directed to a radio network controller. The radio network controller includes means for determining a number of bit rate classes. The radio network controller also includes means for setting minimum bit rates for the bit rate classes. The radio network controller further includes means for setting a general minimum bit rate. The radio network controller additionally includes means for setting a maximum transmission power target. The radio network controller also includes means for arranging resource requests into a queue. The radio network controller further includes means for allocating resources according to the requests in the queue by using the minimum bit rates as bit rate allocation portions until the maximum transmission power target is achieved.

Claim 24 is directed to a radio network controller. The radio network controller includes means for determining a number of bit rate classes. The radio network controller also includes means for setting minimum bit rates for the bit rate classes. The radio network controller further includes means for setting a general minimum bit rate. The radio network controller additionally includes means for setting a maximum transmission power target. The radio network controller also includes means for arranging resource requests into a queue. The radio network controller further includes means for allocating resources according to the requests in the queue by using the minimum bit rates as bit rate allocation portions. The radio network controller additionally includes means for increasing bit rates based on the queue until the maximum transmission power target is achieved. The radio network controller also includes means for decreasing the required number of bit rates in a predetermined way.

Claim 25 is directed to a base station. The base station includes means for arranging resource requests into a queue. The base station also includes means for allocating resources according to the requests in the queue by using minimum bit rates as bit rate allocation portions.

Claim 26 is directed to a base station. The base station includes means for arranging resource requests into a queue. The base station also includes means for allocating resources according to the requests in the queue by using minimum bit rates as bit rate allocation portions. The base station further includes means for increasing bit rates based on the queue until a maximum target set for a transmission power is achieved. The base station

additionally includes means for decreasing the required number of bit rates in a predetermined way.

Applicants respectfully submit that the cited reference, Raitola, fails to disclose or suggest all of the elements of any of the presently pending claims.

Raitola generally relates to a method for capacity allocation for packet data headers. At page 9, lines 9-20, Raitola indicates that bit rate allocation is initiated by a bit rate request that the packet scheduler (PS) receives from a mobile station or a base station. The packet scheduler allocates resources based on parameters, such as a requested bit rate, system load, and estimated load change. The packet scheduler may allocate the requested bit rate, a smaller bit rate, may deny the request, or may postpone the allocation.

As explained at page 10, lines 10-12, the packet scheduler of Raitola may have a target power that it tries to reach. However, Raitola permits the target to be occasionally exceeded.

As explained at page 11, lines 31-34, in Raitola, if the PS is not able to allocate capacity for every bearer that requests capacity, the unscheduled capacity requests remain in the respective queues. As further explained at column 12, lines 8-10, the bearer bit rate can be modified by the PS during a packet switched connection. Moreover, as explained at page 13, lines 14-22, Raitola indicates that different timing periods for allocation and modification may reduce the signaling and load at the radio network controller (RNC). In particular, Raitola indicates that because modification takes more signaling resources and load than allocation, allocation should be performed more frequently than modification.

At page 20, lines 18-32, Raitola indicates that the selection of bearers whose bit rates are to be decreased can be done randomly. However, Raitola provides several priorities or rules that can be taken into account. Raitola provides a specific example of decreasing the bit rates of lower priority class bearers in random order, then higher priority class bearers in random order, then switching lower priority class bearers from a dedicated transport channel (DCH) to a CCH in random order, and finally switching higher priority class bearers from DCH to CCH in random order.

Thus, Raitola explains that capacity allocation is based on a use of minimum allowed bit rates that are cell specific configuration parameters. The rule of the minimum allowed bit rates is that they define the minimum peak bit rate that can be allocated (see page 19, lines 12-25, of Raitola). The minimum allowed bit rates are used to define lower limits for bit rates (see page 20, lines 11-16). The use of minimum allowed bit rates can be seen in Figure 3 of Raitola. As shown in Figure 3, the fifth request obtains no allocation despite there being free capacity, because the amount of free capacity is less than the minimum bit rate (128 kbps) (see page 19, lines 29-32).

As can be seen above, Raitola describes the use of only one minimum bit rate. In certain embodiments of the present invention, in contrast, several minimum bit rates are set, for example: a general minimum bit rate and minimum bit rates for bit rate classes. A general minimum bit rate can be allocated if there is too little capacity left for the bit rate class-specific minimum bit rates to be used, as can be seen from page 9, line 34, to page 10, line 12, of the present specification (paragraph [0057] of the published version of the present application).

Additionally, unlike certain embodiments of the present invention, Raitola presents bearer classes only to be used for prioritizing bearers from which bit rates are decreased (see page 20, lines 18-22). In Figure 4 of Raitola, for example, Raitola shows a flow chart depicting the bit rate algorithm of Raitola in the event of an increasing load. As can be seen by reviewing Figure 4 (and the corresponding description at page 20 of Raitola), Raitola does not disclose or suggest that bit rate classes or anything analogous thereto would be determined. Furthermore, Raitola does not disclose or suggest that different minimum bit rates would be defined for the bearer classes.

The distinctions between Raitola's disclosure and certain embodiments of the present invention are reflected in the claims. For example, claims 1-2, 9-10, and 17-26 each recite: "allocat[ing] resources ... according to the requests in the queue by using [the] minimum bit rates as bit rate allocation portions." Applicants respectfully submit that Raitola does not disclose or suggest at least this feature.

As illustrated above, Raitola contains no discussion that minimum bit rates would be used as bit rate allocation portions in bit rate allocation. Accordingly, because Raitola does not disclose or suggest at least this feature, it is respectfully submitted that Raitola does not disclose or suggest all of the features of any of claims 1-2, 9-10, and 17-26.

The Office Action stated that Figures 3-4 of Raitola disclose these features. However, as explained in detail above, Raitola only discloses a single minimum bit rate, not "minimum bit rates" as required by the presently pending claims, and certainly not the entire feature "allocat[ing] resources ... according to the requests in the queue by using [the] minimum bit rates as bit rate allocation portions."

The Office Action, in the Response to Arguments section, further asserted that the claimed feature is shown in Figure 7b and at page 17, lines 21-26, page 19, lines 26-29, and page 20, lines 11-16, in addition to Figures 3-4. Applicants respectfully disagree.

As the Office Action correctly noted, at page 2, item 1, of the Office Action, in terms of minimum bit rate, what Raitola discloses in the cited passages is a single minimum allowed peak bit rate of 128 kbps (page 19, lines 27-29; page 20, lines 11-16). Thus, although Raitola discloses that the minimum bit rate is configurable (page 21, lines 12-14), in any given embodiment of Raitola, only a single minimum bit rate is described, and thus Raitola cannot disclose or suggest "allocat[ing] resources ... according to the requests in the queue by using [the] minimum bit rates as bit rate allocation portions." It is, therefore, respectfully requested that the rejection of claims 1-2, 9-10, and 17-26 be withdrawn.

Claims 3-8 and 11-16 depend respectively from, and further limit, claims 1-2 and 10. It is, therefore, respectfully submitted that claims 3-8 and 11-16 recites subject matter that is neither disclosed nor suggested by Raitola. Thus, it is respectfully requested that the rejection of claims 1-26 be withdrawn.

For the reasons explained above, it is respectfully submitted that each of claims 1-26 recites subject matter that is neither disclosed nor suggested in the cited art. It is, therefore, respectfully requested that all of claims 1-26 be allowed, and that this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone,

Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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